CLAIMS:

1. A use-authorization device for security-related applications, in particular access control to secure areas or for securing vehicles, with

- a user-end key unit for generating consecutive, alternating user code information which has a sequence of consecutive function values $v_{i+1} = F(v_i, const)$ for $i = 0, \ldots, N$ through the repeated use of a one-way function $F(v_i, const)$, which function values are used in inverse order to the sequence formation to create the consecutive user code information; and
- an application-end processing unit for determining actual authorization information which is dependent upon the user code information received from the key unit and for performing a use-authorization checking process by comparing this actual authorization information with the application-end desired authorization information, as well as for generating use-release information depending on the result of the comparison, wherein the desired authorization information has a function value v_i which has been transferred from the user code information which had been processed during the previous positive use-authorization operation;

characterized in that

- there is a certain number of levels G provided from which a certain number of iterative function value calculations can be performed in each level by means of the one-way function $F(v_i, const)$, and
- there are $G = \lceil L(N)/b \rceil$ levels, wherein N is the starting value, $L(N)$ is the number of bits required for representing N in the dual system and b is the basis.

2. A device as claimed in claim 1, characterized in that there is a support point $s(i)$ where $i = (1, \ldots, G)$ provided for each level.

3. A device as claimed in claim 2, characterized in that the values for the support points $s(i)$ are determined from the equation

$$s(i) = N - \sum_{j=1}^{i} \left(2^b\right)^j$$

4. A device as claimed in any one of claims 2 or 3, characterized in that no function values can be calculated for support points with a negative index.

5. A device as claimed in at least one of claims 2 to 4, characterized in that the parameter b is adapted for a specified number of support points in such a way that the function value calculations per use authorization are minimized.

6. A device as claimed in at least one of claims 2 to 5, characterized in that, starting from the current support point $s(i)$, there should be a certain number of function values calculated in each level in descending order and saved as intermediate values.

7. A device as claimed in claim 2, characterized in that an intermediate value for the support point in a level should be reset successively in this level once this intermediate value, as a new support point, has been transferred to the next level down.

8. A device as claimed in at least one of the preceding claims, characterized in that the starting value is $N = \left(2^b\right)^G$.

9. A device as claimed in at least one of claims 1 to 7, characterized in that the starting value is $N \in \left\{\left(2^b\right)^{G-1}, \ldots, \left(2^b\right)^G - 1\right\}$.

10. A device as claimed in at least one of the preceding claims, characterized in that there were several buffers provided for saving intermediate values which are calculated from the function values.

11. A device as claimed in claim 10, characterized in that the buffers are FIFO memories.